



Latrobe Valley Naturalist

January - February 2016

Issue No. 582

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General meetings

Held at 7:30 pm on the
fourth Friday of each month
at the Newborough Uniting
Church, Old Sale Road
Newborough VIC 3825



This attractive specimen of *Hypholoma fasciculare* was photographed at the East Tyers River campsite during a fungi foray in May 2015 (Photo: Estelle Adams).

Upcoming events

Bird Group: Tuesday 2 February – EA Wetland survey. Meet at the Morwell Bridge gate 8:30am. Confirm with Alix before 29 January on 5127 3393 or alixw@spin.net.au as cancellation may occur due to extreme weather.

Club Summer Camp: Mt Baw Baw 5-8 February 2016

Botany Group: Saturday 13 February – Looking at Mt Baw Baw plants

February general meeting: Friday 26 February

'Dragonflies & Damselflies' – Reiner Richter

Excursion: Saturday 27 February – Traralgon Railway Reservoir Conservation Reserve

Bird Group: Tuesday 1 March – Sale Wetlands. Meet at Lake Guthridge 9:30am. Confirm and arrange carpooling with Alix by 25 February.

Botany Group: 5 March and 26 March – details to be confirmed

March general meeting: Friday 18 March

'Regeneration of the Strzelecki Gum' – Harley Schinagl

Excursion: Saturday 19 March – Wonthaggi Desalination Plant

Importance of fungi in carbon management

Quote: "It is worth contemplating that, should the world's large mammals suddenly disappear, most ecosystems would probably continue to function. But if the fungi disappeared, many of the Earth's ecosystems would arguably soon collapse." ¹

Dr Mary Cole reinforced this observation with reference to agriculture in her May 2015 talk to our Club. The soil structure affects water and oxygen movement in the soil as well as root penetration, soil stability and workability. Incorporation of organic matter increases water retention and an active soil food web.

Mycorrhiza,² in conjunction with organic matter, soil particles, water, and other microorganisms, form a healthy web that suppresses disease, retains nutrients, eliminates the need for fertilisers and chemicals, decomposes toxins, builds or re-builds soil structure, and reduces water use by increasing water-holding capacity.

Soil bacteria release three times the carbon dioxide (CO₂) into the atmosphere that fungi do; fungi binds CO₂. Cultivating bare soil reduces the fungal population and contributes to soil and nutrient loss, resulting in biomass loss. Loss of 1mm of soil is the equivalent of losing 14 tonnes per hectare. Cultivation adds to global warming by adding CO₂ into the atmosphere.

Carbon dioxide emissions can be reduced by:

- Accurate fertiliser use
- Less soil disturbance
- Better irrigation
- Replacement of more energy-intensive farming practices
- Reduced till, or non-till, farming
- Incorporating post-harvest crop residue waste for carbon storage

The decomposition of organic matter in the soil encourages water retention and the fungal mycorrhiza probably do better than bacteria in maintaining this retention.

In the natural environment, 14% of the world's soil carbon is in wetlands, making them very important in carbon retention. Only six percent of the earth is wetlands, and draining them increases CO₂ in the atmosphere. Reafforestation of marginal land with not-to-be harvested forest decreases CO₂, while creation of farmland results in loss of species, loss of litter and loss of natural decomposers.³

Soil carbon occurs as particulate organic carbon (most of which is lost through microbial activity), humic organic carbon being the first to decompose and resistant organic carbon the last. The fungal component keeps carbon deep in soil and supplements root uptake of nutrients. Added phosphorus reduces the fungal activity. Mycorrhizal fungi are a carbon sink and hold 60% of carbon in soil, in long-term sequestering. The hyphae collect sand, silt and clay particles, forming an aggregate. Decomposition slows, calcium oxalate is produced by fungal hyphae, and the fungal mat increases phosphorus and sulphur availability, reducing the need for superphosphate.

Dr Cole practises what she preaches. On her property at Garfield she makes an organic tea containing molasses, fish emulsion and other organic ingredients which are dribbled into a 20cm

rip in the ground. After 3-4 weeks the clover growth is astonishing. She showed us a picture of adjoining paddocks of hers and her neighbour's; one was the dried up, yellow of summer paddocks and the other was a brilliant green.

Jackie Tims

¹ From 'Fungi of Southern Australia', Neale L Bougher and Katherine Syme, UWA Press 1998, Page 10

² Mycorrhiza are the fine filaments (hyphae) often seen associated with roots of plants which often assist in the absorption of minerals for the plant. Ectotrophic mycorrhiza form a network of hyphae around the root and endotrophic mycorrhizal hyphae enter the cortex cells of the roots.

³ Farming represents 16% of CO₂ emissions - JT

Fungi Foray in Baw Baw National Park 23.5.15

Chilly and foggy, it seemed the right day to go hunting for fungi when we met at Erica with our guides from the Friends of Baw Baw NP. While we shivered, the birdwatchers saw Yellow-rumped Thornbills and a Satin Bowerbird in the trees.

First stop for fungi was a track off the road to the Thomson Dam where our guides knew of interesting finds on both sides of the road. Several green convex caps lurked along the edge of the track, some dark, others yellowish, all with yellow gills. Originally *Cortinarius austrovenetus*, it is now known as *Dermocybe austroveneta*. Its green colour, uncommon in agaric fungi, is from pigmentation and not from photosynthesis and makes this species easy to recognise. Nearby was the larger mustard-coloured *Austropaxillus infundibuliformis* with forked, decurrent gills continuing down the stem. We saw several other specimens later. An ageing *Russula purpureoflava* was losing its colour. The greyish *Amanita umbrinella* contrasted with the bright yellow, always shiny, *Cortinarius sinapicolor*. Clustered together were several individuals of the *Phellodon niger* species, the *niger* referring to the black at the centre of the white-fringed caps, which were slightly funnel-shaped.

Across the other side of the road, the track sloped down to a creek and up the far hillside where it was drier. The underside of a dead branch had been colonised by patches of the pinkish-violet, leathery shelf-fungi *Stereum illudens*, fringed with white, droplets of moisture adhered to it. Gathered together in the grass, the dainty *Mycena albidofusca* had flattened white tops to their pale brown and white conical, striated caps. Tiny *Mycena viscidocruenta* were only visible because of their bright scarlet caps and stems. Another *Russula* was thought to be *Russula mariae*. Growing amongst the litter were



Shelf fungus *Stereum illudens* (Photo: Estelle Adams)

clumps of pale coral fungi, possibly of the *Clavaria* genus, and a brown cup fungus beginning to break at the curled edges, probably one of the *Peziza* species. The delicate *Marasmius alveolaris*, with their black, impossibly long stems and fawn cups, had colonised a piece of eucalypt bark. *Collybia eucalyptorum* grew up a tree; with some of their caps uptilted like a trilby, they displayed their cream-coloured gills. *Panellus pusillus* was almost lost in the undergrowth, its pored, kidney-shaped caps little bigger than a finger-tip. An old *Amauroderma rude* had a velvety cap but was being colonised at the stipe (stem) base by other fungi.

Several *Trametes versicolor*, with varying coloured rings, were growing in ranks on a log. Close by grew several small clumps of the bright yellow coral fungi *Clavaria amoena* and, further up the hill, clumps of a greyish *Clavaria* species. With deep-orange convex caps and stems, several fungi of a *Laccaria* species had grown through the hard surface of the track while the bulbous base and shiny yellow cap of *Dermocybe canaria* had recently pushed up through the soil. As its name suggests, *Crepidotus eucalyptorum* grows on eucalypts; it is a very small fungus with a short stem and curled-under rims on the caps.



A possible *Thelophora* species (Photo: Estelle Adams)

There were no signs of any animal remains beneath the *Hebeloma aminophilum*, but there could have been some buried. With bright yellow pores and deep pink cap and stem, the *Boletus obscurecoccineus* was very distinctive and, masquerading as fungi (and labelled as such until 2002) was *Lichenomphalia umbellifera*, with its orange-brown fruiting fungal body and its algal mat below. At our turn-around, well up the hill, several large rounded balls of fungi, which looked rather like a velvety brown and white brain, were found beneath a tall eucalypt. No one there had seen it

before but it was suggested it might be a species in the Thelaphoraceae. *Panellus pusillus* was colonising a log; their small, thin white caps were somewhat kidney-shaped and stood upright in ranks, held in place by tiny lateral stems to display the pores on the underside.

Lunch was eaten in the park at Rawson where trees displayed brilliant autumn colours and Purple Swamphens wandered about as we asked Mary Cole to enlarge on her talk at the meeting the previous night. A King Parrot was in the trees while Australian Wood Ducks were at the lake. Some very old, very black *Amanita muscaria* beneath the trees were still recognisable.

Clumps of Pink Heath *Epacris impressa* edged the gravel road as we drove towards East Tyers River campsite where it was cold, dim and damp, making it ideal for fungi, lichens, mosses and liverworts. A carpet of green on a high branch of an Austral Mulberry was identified as liverworts when binoculars showed the tiny brown crosses of their fruiting bodies. A mat of dark grey, leafy lichen *Pseudocyphellaria* sp. grew amongst mosses and liverworts, as did very dark brown cup fungi *Plectonia campylospora*. Strings of rhizomorphs scrambled over the plants with a lacy mat on bark. A brown bracket fungi, edged with white, was fruiting on a doomed tree. Two jelly fungi – *Pseudohydnum gelatinosum* with pale brown upper surfaces and tiny white spines, and the white *Tremella fuciformis* – grew on several stumps. Amongst the gilled fungi were tiny white *Mycena albidocapillaris* and the much larger *Cortinarius lavendulensis*, the centre of its lilac cap a rusty brown. The stems of other small fungi grew out from the tree before turning upwards, enabling the spores to spread more easily to other hosts. With its fancy white gills, *Campanella junghuhnii* clustered on a twig, while ascending clumps of young sulphur-capped *Hypholoma fasciculare* still had veil fragments attached to the cap margins.

Many thanks to the Friends of Baw Baw NP who led us on a successful fungi foray.

Estelle Adams

Plastic pollution in Flesh-footed Shearwaters on Lord Howe Island

Jennifer Lavers spoke to our club in February 2014 about her research into plastic pollution and its effect on seabirds, and this was reported in the April 2014 edition of the Naturalist. The research project on the Flesh-footed Shearwaters (FFSH) on Lord Howe Island has been running for eight years now, making it the longest running project of its kind. For three weeks in April - May when the chicks are ready to fledge and fly to Japan, they are monitored and the data collected. Three of our club members – David Stickney, Ken and I – joined her for a few days to try and help out in a small way.

The Flesh-footed Shearwaters have large nesting colonies in many places on the island, which are burrows in the sand and tree roots, and adult pairs return to the same site each year. Most of the adults had left by now, and the young follow when they are ready to make the long journey to Japan where they spend up to seven years entirely airborne, not touching land until they first return to breed on Lord Howe Island at age 5-7 years. The chicks shelter in the burrows by day, then at night come out to flap their wings and strengthen their muscles ready for the long flight.

Each morning all the beaches would be walked to pick up any dead or weak birds washed in overnight. These were the birds that were not strong enough to fly far, and would fall into the sea. On the west side of the island we were also picking up Wedge-tailed Shearwaters which nest on Blackburn Island, close to shore in the lagoon. Roadkill was also collected, as the birds are attracted to the infrequent road lights and sit on the road. Even though most cars travel very slowly to avoid them, there are inevitable casualties.

Everyone would meet at Ian Hutton's place to process the birds. Ian is considered an expert on Lord Howe Island natural history, publishing many books including ones on the marine life, plants and birds. He was the first person to publish on FFSH plastic ingestion, starting to collect data in 2005, and is one of the project team. The birds would be weighed and dissected to collect feathers, blood and vital organs. The proventriculus (stomach) and gizzard would be opened and the contents collected. Jenn is supervising two students doing projects on these birds as well.



Examining the internal organs of a dead shearwater
(Photo: Wendy Savage)

Anicee Lombal, from Belgium is a PhD student at UTas studying the population genetics and demographic history of the Providence Petrels with the view to establishing a new colony on Norfolk Island. She is also looking at the Lord Howe Island FFSH to determine their genetic diversity and to see if the birds are a separate species from the colonies in WA and NZ. If so, it could be very significant for the status of the dwindling population on LHI.

Phoebe Lewis is an honours student at RMIT studying the effect of Persistent Organic Pollutants (POPs e.g. PCBs, DDT and other pesticides) on the birds. She was collecting feathers from the wings, tail and body as well as muscle, liver and kidney tissue. If a relationship could be



Ken Savage assisting Jenn with the lavaging procedure (Photo: Wendy Savage)

quantified between the pollutant level in the feathers and the flesh and organs, then pollution levels could be determined from feathers alone. Each evening after dark a different breeding colony would be visited and any underweight or fluffy juveniles would be picked up for data collection. These were weighed and measured, and the stomach lavaged (flushed out with water) to see if it contained plastic, then each was returned to its nest burrow.

Interestingly, there has been a big drop in the number of birds found with ingested plastic since 2012 and that was the case again this year. This

raises a number of questions. Are the birds learning to avoid picking up the plastic? Is there less plastic on the ocean surface where they forage? This may sound like good news, but anecdotally there has been a huge drop in the population of FFSH on the island. All the locals that Jenn spoke to had noticed it, so it must be significant. The chicks are quite unhealthy, and the level of plastic pollution is still higher than in other seabirds.

A number of the dissected birds had pumice in their gizzards, which was presumably from the undersea volcano that erupted near the Kermadec Islands in mid-2012. One doomed bird had large fragments of a purple balloon in its proventriculus and gizzard as well as part of a white balloon. Little do people think when thousands of balloons are released for ceremonies where they will end up, or the damage they may cause.*



A balloon lodged in the stomach of one bird (Photo: Wendy Savage)

It was not all work though, and the lovely warm weather was perfect for walking and swimming. The marine life is spectacular, with the coral reefs accessible from the beach, so snorkelling is an easy way to see the numerous, diverse and beautiful marine creatures. Ian took us all rockpooling, and we saw four species of sea cucumbers, mostly the size of very overgrown cucumbers, as well as a number of sea urchins. The colourful sponges underneath the flat rocks are known as 'artist's palettes' and look just like splashes of many paints together. A colony of Providence Petrels at the base of Mt Gower wheeled around calling incessantly in their courtship flights, and at dusk came down to sit on the ground where they could be easily photographed. A walk up to Goathouse Cave on Mt Lidgbird was rewarded with glorious views of the island stretched out below and Red-tailed Tropicbirds and Providence Petrels flying at eye level.

This was a most rewarding holiday, and it was a privilege to help with this project that is partly funded through the donation from our club.

- If you google "balloon ban petition Australia" you will find a lot more information about this, as well as a couple of petitions which you may like to sign.

Wendy Savage

David Stickney on the Chatham Islands

David's talk at the June meeting was not just about the Chatham Islands. He took us on a tour of many islands to the south and east of New Zealand and we saw a great range of New Zealand birds, especially the seabirds. Since European settlement, New Zealand has a very high extinction rate for its native fauna, especially the birds. It also has a very high reputation for the conservation efforts they have put in, by eliminating rats from a number of off-shore islands and in some cases re-introducing endangered birds that are now thriving in this protected habitat. His talk was divided into four parts, starting with his visit to Stewart Island, the third largest island off New Zealand, just south of the South Island and the first stage of David's trip to the Chatham Islands. On Stewart Island, David met a number of NZ birds. These included the Weka (a flightless rail – Stewart Island has an endemic subspecies), the Kaka (a large, uniquely New Zealand parrot), the Red-crowned Parakeet (one of several subspecies, all fairly uncommon), the South Island Kiwi (David watched five feeding on a beach at night, but couldn't photograph them), the very tame New Zealand Robin, the rare endemic Yellowhead, the Saddleback, the Tui (a honeyeater) and the New Zealand Pigeon. Then, among shore and waterbirds, we saw the Variable Oystercatcher, South Island Pied Oystercatcher, White-fronted Tern (which migrates to Australia in winter) and the rare, endemic Black-fronted Tern. We saw several albatrosses: the White-capped, Salvin's, Southern Buller's and a juvenile Southern Royal. Finally for Stewart Island he showed us the endemic Stewart Island Shag (many NZ island groups have their own endemic shag species) and a Little Penguin (again a local subspecies). He diverted from the birds very briefly to show us an orchid in flower, which I have identified as the Easter Orchid or Raupeka *Earina autumnalis*, an autumn-flowering epiphytic orchid with a strong, sweet scent when in flower.

For the second section, David diverted from his recent trip and took us to the more southerly islands. Macquarie Island is the furthest south on 54°. It lies on a major fault, which forms a long underwater ridge, and Macquarie is the only place where it shows above the sea. It has many seabirds, but David showed us three species of penguin: the King Penguin which gathers on the beaches in a flock of 250,000, the Royal Penguin (one of seven crested penguin species), which is endemic to Macquarie Island, and the Gentoo Penguin. From Campbell Island we were shown a Southern Royal Albatross and from Snares Island the endemic Snares Penguin.

We then returned to the Chatham Island trip, moving on to the Antipodes. They were so named because they are almost diametrically opposite London. In fact they were originally named Penantipodes, meaning 'nearly opposite'. David's group were not permitted to land, but nevertheless saw a wide range of birds, including land species such as the endemic Antipodean Pipit and the endemic Antipodean Parakeet. Other special birds included the Erect-crested Penguin, one of the rarest penguins in the world and apparently in decline. We also saw the Antipodean Albatross – a cousin of the Wandering Albatross that never loses its juvenile plumage – a Southern Great Skua and a Northern Giant Petrel.

We then moved to the Bounty Islands, which consist of 22 large rocks, but still hold a wealth of seabirds including another endemic shag – the Bounty Island Shag – and a Fulmar Prion.

We finally reached the Chatham Islands. These are further north, at about the same latitude as

Christchurch, but nearly 900km to the east. They were first inhabited in around 1400 by Polynesians and then Maoris, and Europeans settled there in 1838. Farming resulted in major clearance of vegetation and this and hunting resulted in a big decline in bird populations including the seabirds. Legal hunting only ended in 1950. There are a large variety of introduced animals that add to the pressure on all the bird species, but despite all this the Chatham Islands have the highest seabird diversity in the world. There are 24 species of seabird that breed on these islands and a total of 41 species have been recorded in the area. The seabirds include six species considered rare and vulnerable and two species considered endangered. The endangered species are the Chatham Island Taiko (or Petrel) and the Chatham Petrel; David did not get to see either of these.

Pyramid Rock in the Chathams is the breeding place for the endemic Chatham Island Albatross. We were shown two more endemic seabirds in the Chatham Islands, the Pitt Island Shag and the Chatham Island Shag, and an endemic subspecies of the Little Penguin, the White-flipped Penguin. Endemic land birds include the Chatham Island Tui and the Chatham Island Pigeon. The Buff Weka was introduced from the mainland when the endemic Chatham Island Weka became extinct. The Buff Weka now



Chatham Island Albatross
(Photo: David Stickney)

thrives on the island, but has apparently disappeared from the mainland. One of the rarest birds in the world is the Black Robin. It was believed extinct, but five birds were rediscovered on Little Mangere Island. These were captured and transferred to Mangere Island and from them two eggs were produced and hatched. From that small start, a fragile population of around 200 birds is now maintained. David's party passed very close to Mangere Island, but did not get to see a Black Robin. A few more special Chatham Island birds we were shown were the Shore Plover, the Chatham Island Oystercatcher and the Forbes Parakeet. David's party also visited the Forty-fours, a group of little islands 50km east of Chatham Island, where a variety of albatrosses were seen.

Finally returning to Christchurch, and subsequently to the North Island to Rotorua, David showed us several more New Zealand birds including the New Zealand Scaup, the Paradise Shelduck, the Black-billed Gull, the Little Shag and the New Zealand Falcon.

David's bird photographs were superb, especially the seabirds, and many of us envied him his visit to some very special places.

Ken Harris

Report on 2015 Birdlife Australia Bird Challenge Count

In 1998, LVFNC joined in the BCC with 2 groups covering 8 sites in one day, resulting in 1228 birds and 64 species. Since then the number of sites, participants and time spent has increased. In 2015, 42 people in 8 groups covered 15 sites over 3 days resulting in 5274 birds (2nd highest; record 6275 in 2012) and 128 species (3rd highest; record 137 in 2008). The variation in sites, participation numbers, expertise and time mean that the data are difficult to compare between

years. Regardless, we all had an enjoyable time and some good birding. Thank you to all participants, particularly the leaders.

Highlights from the 2015 data:

First ever in this region, one Red-necked Stint (identified from a photograph) at the Moe Waste Water Treatment Works, all the way from Siberia, and first record on a BCC day of an Eastern Koel in Traralgon and an Azure Kingfisher at the Edward Hunter Bushland Reserve in Moe.

Comparing highest individual species records in 2015: Little Ravens 347 (61 in 2014), Sharp-tailed Sandpipers 100 (rare; none since 2009), Australasian Grebe 295 (144 in 2014), Masked Lapwing 70 (31 in 2014), Australasian 'Clamorous' Reed-Warbler 33 (15 in 2014) and continued increases in Yellow-faced Honeyeaters. Decreases in Straw-necked Ibis 19 (133 in 2014) and Welcome Swallow 37 (66 in 2014).

Some highlights for participants:

- A pair of Grey Fantails building their nest at Lake Narracan.
- Three young Yellow-tailed Black-cockatoos with five adults at the Edward Hunter Bushland Reserve
- Golden Whistler feeding a young one which was a most unusual colour (fits the bird book description of rufous)
- Sacred Kingfisher observed on reeds, then flew directly towards us to perch nearby at TRRCR
- A psychotic Red Wattlebird that did *not* like the bluetongue lizard in our garden
- At the EA wetlands, Brett had identified six Yellow-billed Spoonbills; later I counted another two more but they turned out to be just their reflections on the water
- Later we were treated to a close up encounter with a pair of Mistletoebirds and the four Nankeen Night-herons appeared from their usual hiding place for the lucky few
- Crinigan Bushland Reserve was busy with large numbers of Musk Lorikeets and Pied Currawongs
- A Latham's Snipe in Mathison Park, and four Rufous Fantails in three different spots in Morwell National Park
- An Olive-backed Oriole in Mathison Park was special for some of our participants who had never seen one before.

Alix Williams

REPORT ON BUSINESS MEETING 23.11.2015

Finance

Cash Management Trading Account: \$2,080.88 Term Deposit: \$12,796.10

Business Arising, Correspondence & General Business

- Data projector: John Poppins has done some investigation and will report further. He did suggest to the club that his units only allow SVGA D-Sub connection. It will be necessary to have at least an HDMI interface as well on new projector
- Radio batteries: Alix has purchased 5 packs of 4 rechargeable 2400mAh NiMH batteries, at \$5.99 per pack, for the radios and sound equipment

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VALE

Vi Harrison	A Williams	580 Sep-Oct
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